Ion-Selective Electrode (ISE) for Ammonium

Measurement and Reference Half Cell Combined

Article-No. 461 7400

Properties

- single-rod measuring cell
- slope 55 +/- 3 mV/pNH_4^+
- durability 6 to 12 month

Applications

- waste water
- environment
- aquaculture

Technical data	
Measuring principle	Ion-Selective Electrode (ISE)
Measuring range	10^{-6} – 10^{-1} mol/L; Linear: 10^{-5} – 10^{-1} mol/L 0,018 mg NH_4^+ /L – 1,8 g NH_4^+ /L (Linear: 0,18 mg NH_4^+ /L – 1,8 g NH_4^+ /L)
Temperature range	0°C to 40°C
Pressure range	1 bar – 2 bar
pH range	3 pH – 8 pH
Selectivity coefficients	$C_{Li, NH4}$ 1 x 10-4 $C_{Na, NH4}$ 3 x 10-3 $C_{K, NH4}$ 2 x 10-1 $C_{Rb, NH4}$ 6 x 10-2 $C_{Cs, NH4}$ 5 x 10-3 $C_{Mg, NH4}$ 1 x 10-4 $C_{Ca, NH4}$ 1 x 10-5 $C_{Sr, NH4}$ 1 x 10-3 $C_{Ba, NH4}$ 1 x 10-4
Slope	55 +/- 3 mV/pNH_4^+
Dimensions	Diameter: 12 mm (Shaft) and 16 mm (Connection Cap) Length: 107 mm (Shaft) and 147 mm (Shaft + Cap)

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Preparation to Measurement

The electrode is delivered with the electrolyte solution inside the shaft. If the electrolyte solution is not inside the shaft the electrode has to be refilled 1 cm under filling port.

Calibration and Measurement

The electrode should be calibrated by standard solutions with known concentrations. It depends on the measurement if a one-point calibration (1 known concentration and the blanc) is enough or if it would be better to calibrate with more than 1 standard solutions of different concentrations.

Exchange of the Membrane Module and Filling of the Electrode

1. Open the filling port on the electrode shaft and unscrew the black membrane module.
2. Rinse with distilled water through the inner shaft.
3. Drain of water (splash).
4. Fill the electrolyte solution into the black membrane module.
5. Screw the black membrane module containing the electrolyte solution onto the electrode shaft.
6. Fill the electrolyte solution into the electrode shaft through the filling port 1-2 cm under this port.
7. Close the filling port.

Storage of the Electrode

When it is not measured with the electrode, it is recommended to store it dry (with the original electrolyte solution) above the level of water in the tube, that is delivered with the electrode.